Before the

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C. 20554

Comments in Opposition to Land Mobile Communication Council Petition for Rulemaking

In the matter of:

Land Mobile Communication Council Petition for Rulemaking	)	
An Allocation of Spectrum for the Private Mobile Service	)	RM-9267

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To the Commission:

1. INTRODUCTION

On April 22, 1998, the Land Mobile Communications Council (LMCC) submitted a Petition for Rule Making before the Commission, seeking an allocation of spectrum for the Private Movile Radio Services (PMRS), and suggested bands of frequencies it feels would be suitable for this service. The most immediate recommendation would impact the current secondary status of the Amateur Radio Service in the 420-450 MHz band, specifically the subbands 420-430 and 440-450 MHz. The reallocation sought in this petition would not be in the best interest of the public or the Amateur Radio Service, and the supporting statements of the LMCC are flawed.

2. QUALIFICATIONS OF THE UNDERSIGNED

The undersigned is well qualified to comment in this matter. He has been a licensed Amateur Radio Operator since June of 1953, and currently holds an Advanced Class License. He was awarded a Ph.D. Degree in Electrical Engineering by the Johns Hopkins University, and is currently Manager of Simulation and Analysis for the Ketron Division of the Bionetics Corporation. He is a Past President of the Baltimore Radio Amateur Television Society, and maintains an Amateur Television (ATV) repeater on the 420-450 MHz band for that organization. He is currently an Assistant Director of the American Radio Relay League, Inc. (ARRL), and has served the

ARRL as Chairman of the VHF/UHF Advisory Committee and Chairman of the Spectrum Managment Committee. He derives none of his income directly from use of the frequencies in question.

3. SPECIFIC REASONS FOR OPPOSITION

Although the majority Amateur Service usage of the 420-450 MHz band involves narrow band FM operation, including fixed, mobile and hand-held stations, the subband from 420-440 MHz supports a wide variety of modes which are a benefit both the the Amateur Service and the public. This operation, which will be briefly discussed below, is simply not compatible with PMRS usage.

The hundreds of FM repeaters in operation between 440-450 MHz are well documented in the A.R.R.L. Repeater Directory. These stations are generally high power (on the order of 500 watts), and represent a large investment in time and money on the part of the operators. Less known, but very important, in the region between 420-440 MHz, are approximately 100 Amateur Television (ATV) repeaters, weak signal operation, orbiting satellites, earth-moon-earth (EME or "moonbounce") stations, and experimental modes. In addition, the region between 420-430 MHz contains hundreds of control and link systems which support FM repeaters not only in the 70 cm band, but also on the heavily populated 2 meter band. It should be noted that much of this control and link operation was forced to move to 70 cm more than ten years ago when the Amateur Service lost 220-222 MHz.

The satellites operate in subbands set aside for this purpose, and where other repeater operation is banned. These satellites obviously cannot change operating frequency. Much of the weak signal and EME work involves sophisticated antennas and other "plumbing" which again cannot be easily changed in frequency. Maintaining compatibility over this wide range of modes and usage has been a subject of major efforts on the part of the American Radio Relay League for many years through its VHF/UHF Advisory Committee and Spectrum Management Committee, each of which the undersigned has chaired. It has been a difficult job even with the full 30 MHz available; it would be impossible with only 10 MHz.

The ATV repeaters, being (at the present time) analog AM systems, are far more complex and expensive than FM audio repeaters. The linearity requirements, lack of "capture effect," sensitivity to weak signal interference, and wide bandwidths, require more expensive transmitters, antennas, filters, and such items as circulators, than would be required for a simple FM system. The ATV repeater operated by the undersigned represents an expenditure of $10,000, and this is probably typical of the other such systems on the band. This does not include the controller and video equipment which could be used on other bands, and thus does represent a financial loss if 420-430 were not available.

The public benefit of continued Amateur operation on 420-450 MHz is both direct and indirect. The direct benefit includes emergency and public service communications which use 70 cm equipment, or use repeaters having controls and links on 70 cm. This includes not only the disasters which make headlines, but also safety support of bike tours, parades, walk-a-thons, and similar public events. The ATV system in the Baltimore area has been used in support of an Independence Day parade, and walks for the National Multiple Sclerosis Society. The impact on this public service, particularly where the loss of the link support for 2 meter repeaters is concerned, should not be minimized.

Indirect benefits to the public include the demonstration, through satellites designed, built, funded, and operated by Amateur Operators, of the utility of low earth orbit (LEO) devices. These systems, first shown to be effective by the Amateur Service, will become a major factor in communication in the near future. Weak signal operation by Amateur Operators, having the luxury of being able to try "unorthodox" antennas, preamplifiers, and modes, can demonstrate where the state of the art can be "stretched" better than commercial laboratories with limited budgets and transmit/receive sites can do.

The LMCC suggests, in paragraph 73, that Amateur applications in the 420-430/440-450 MHz should remain secondary to PMRS. Apparently this means that the current secondary status for Amateur Service with military radar as primary would be replaced by secondary status for the Amateur Service with PMRS as primary. The current arrangement is successful because military radars are inherently difficult to interfere with (even intentionally), and the Amateur operators are willing to accept occasional bursts of interference from these radars. This secondary status could not reasonably be continued if PMRS were to have primary allocation. Mutual interference would certainly result, and the effect would be the elimination of the Amateur Service from 420-430/440-450 MHz.

In an attempt to demonstrate that the loss of 420-430 and 440-450 would actually be good for the Amateur Service, LMCC states that equipment availability and technology resulting from an expanded PMRS presence on 70 cm would benefit hams "pursuing such applications as compressed video television in the 430-440 MHz spectrum." Even if this technology were to be fielded by PMRS (and LMCC by its own statement does not plan to do so in the near future), this would primarily involve baseband signal generation and processing. This technology will become available to the Amateur Service regardless of in what part of the spectrum it is initially used. To suggest that the Amateur Service could not adapt this technology to the 70 cm amateur band unless equipment were specifically provided for that band by PMRS usage is an insult to the long tradition of amateur development capability. It should be noted that this capability includes the design, construction, and operation of some very successful communications satellites.

In paragraph 69, LMCC notes that PMRS already uses 420-430 MHz in Buffalo, Cleveland, and Detroit (cities above "Line A"). This is indeed true. They continue, "History shows that a substantial number of PMRS systems have been implemented in these cities, with no interference problems, wither with Canadian systems across the border or with Federal Government systems in the U.S." No mention is made of interference potential with the Amateur Service, since Amateur operation above Line A is not permmitted. The lack of interference with Federal Government systems is a moot point, since LMCC is asking that such systems be removed from the band. That the Amateur Service is degraded above Line A is hardly sufficient justification to extend this degradation to the entire country. That LMCC would suggest such a thing shows a disregard for the Amateur Service, and clearly implies that this petition, if granted, would not be its last to seek Amateur frequencies for commercial use.

4. SUMMARY

The Amateur Secondary Allocation from 440-450 is heavily used by FM, including numerous repeater systems which could not be accomodated in the 430-440 MHz band without eliminating experimental, weak signal, EME, ATV, and satellite operation, some of which is conducted on frequencies set aside for these applications. The Secondary Allocation from 420-430 is heavily used for repeater links and controls (many of which were displaced by the Commission ten years ago when their original frequencies, between 220 and 222 MHz, were removed from the Amateur Service), as well as for ATV operation which is not permitted on lower frequencies. Moving this operation to 902-928 MHz would be problematic in view of the widespread use of Part 15 devices and vehicle location systems on that band. The rich variety of operating modes, and the benefit to the public of this service, would be lost if the petition were granted. The LMCC certainly has a need for additional frequencies, but has failed to make a case for decimating the second most heavily used VHF/UHF band in the Amateur Service. The petition should be dismissed without further consideration.

Respectfully submitted,

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